1000SW+ USER & INSTALLATION GUIDE

Product description

The Merlin 1000SW+ is a Gas Interlock, Electric and Water utilities isolation panel with gas proving.

The system comprises a control panel and a gas pressure sensor. The Merlin 1000SW+ can receive connections from remote emergency shut-off buttons, gas detector and CO_2 monitor. It also can be integrated with a BMS and fire alarm.

It is recommended that the user reads this guide before using the system. Please do **NOT** attempt to operate the unit until the contents of this document have been read and are thoroughly understood.

Warning: The CO2 Monitor <u>MUST</u> be mounted close to combustion area

ISO 9001: 2008 REGISTERED FIRM | CE | RoHS Compliant

HOW TO TURN THE SYSTEM ON AND OFF

1. Turn the key switch to On position. Unit will beep and CO_2 High LED will flash 3 times if CO_2 Monitor is **NOT** installed.
2. Gas, electric and Water LEDs will flash for 10secs.
3. Press relevant service button to turn required utility On or Off.

   Please Note: All services can be turned On or Off only within 10 secs of the key switch being turned On. After 10 secs, all utility buttons will be disabled. The user must turn the key off and back on to adjust any services.

4. To turn the system Off, turn the key switch to Off position.

EXPLANATION OF LED STATUS

Power LED

When the system is connected to the mains supply, the Red LED of the S&S Logo located in the bottom right corner of the panel will illuminate. When no power is present, this LED will not light up.
RED = OK
OFF = No power to 1000SW+

Gas LED

When the fans are running at the correct speed and the Gas button is pressed, the Gas LED will flash slowly and the Merlin 1000SW+ will check the installation for gas leaks. If gas proving is successful, the gas valve is open and the Gas LED will illuminate BLUE.
BLUE = Gas On
FLASHING SLOW = panel is checking the integrity of the gas installation
FLASHING FAST = Gas Off, Gas button enabled
OFF = Gas Off, Gas Button disabled

Electric LED

When Electric service is turned On, the Electric LED will illuminate BLUE.
BLUE = Electric On
FLASHING = Electric Off, Electric button enabled
OFF = Electric Off, Electric button disabled

Water LED

When Water service is turned On, the Water LED will illuminate BLUE.
BLUE = Water On
FLASHING = Water Off, Water button enabled
OFF = Water Off, Water button disabled

Testing LED

This LED is show GREEN when the panel is checking the integrity of the gas installation.
GREEN = proving the gas line, do **NOT** operate any appliances

Test Fail LED

Under normal working conditions this LED is off. When the panel detects a gas leak, the LED will illuminate YELLOW. Gas valve will remain closed.
OFF = OK
YELLOW = gas proving failed

Pressure Low LED

Under normal working conditions this LED is off. LED will illuminate YELLOW when pressure of the gas supply drops below 12mBar for 10 secs. Gas valve will close.
OFF = OK
YELLOW = gas supply pressure low

Timeout LED

Under normal working conditions this LED is off. LED will illuminate YELLOW when auto-shut down has occurred.
OFF = OK
YELLOW = auto-shut down

EM Stop LED

If the Emergency Shut Off button, (either remote or on the panel) is pressed the LED will show YELLOW.
Gas, Electric and Water services will be turned Off. The EM Stop button must be re-sert before restarting the system.
OFF = OK
YELLOW = EM Stop button pressed

Gas Detected LED

Under normal working conditions this LED is off. If Methane, Carbon Monoxide or LPG is detected (relevant gas detector required), the LED will show RED. The Gas valve will turn Off .
OFF = OK
RED = Gas detected.

CO_2 High

Under normal working conditions this LED is off. If the concentration of CO_2 in the air is too high (relevant detector required), the LED will show RED and the Gas valve will turn Off.
OFF = OK
RED = The concentration of CO_2 is too high.

USING THE EMERGENCY SHUT OFF

The Emergency shut off button is located on the front of the panel. There is also a facility for remote shut off buttons to be wired in series.
The Emergency shut off button(s) will cut off the gas supply when activated.
To reinstate the system, the Emergency shut off button(s) will need to be reset and the panel restarted.

BMS INTEGRATION

The Merlin 1000SW+ can be integrated with a BMS to make or break a circuit on gas on/gas off, (valve open or valve closed). This will tell the BMS whether or not the kitchen has use of the gas supply.

There is a blue dip-switch located on the inside facia of the Merlin 1000SW+ labelled 'BMS Selection'. This is factory set in the 'off' position which signals the BMS on gas on/gas off. When switched to the 'on' position, the Merlin 1000SW+ will only signal the BMS on a fault, i.e. fan fault, CO_2 high level detected, EM Stop pressed, etc.

FIRE ALARM INTEGRATION

The Merlin 1000SW+ can be integrated with a fire alarm to close the gas supply automatically in the event of a fire. The fire alarm can be wired in series with any remote emergency shut off buttons.

FAN SWITCH INTEGRATION

There is the facility to connect a Fan Switch (sold separately).
The Fan Switch provides the facility to turn on the fan(s) when the key switch on the Merlin 1000SW+ is in the on position and turn the power off to the fan(s) when the key switch on the Merlin 1000SW+ is in the off position.
There is a blue dip-switch located on the inside facia of the Merlin 1000SW+ labelled EM Selection. This is factory set in the 'off' position which instructs the system to shut down the fan(s) and gas supply on activation of the Emergency shut off button(s). On installation, this can be switched to the 'on' position if required. This will instruct the system to leave the fans on and only shut off the gas supply on activation of the Emergency shut off button(s).
Note: This option is not available if Fan Switch is not installed.

GAS FILL AND PROVE TIME

Gas fill and prove times are adjustable. There are two blue dip-switches located on the inside facia of the Merlin 1000SW+ labelled "Fill Time" and "Prove Time". They are factory set in the 'off' position. Fill and prove time can be changed by turning the relevant dip switch to on position.

Fill time: Off – 5 secs
On – 10 secs
Prove time: Off – 30 secs
On – 50 secs

AUTO RESET

The Merlin 1000SW+ has a build-in Auto Reset feature. There is a blue dip-switch located on the inside facia of the Merlin 1000SW+ labelled "Auto Reset". This is factory set in the 'off' position. When the power is restored after the power cut, panel has to be restarted manually. On installation, this can be switched to the 'on' position if required. This will instruct the system to restart automatically when power is restored after the power cut.
Note: <u>Only</u> Gas will be turned On when power is restored and Auto Reset is enabled.

AUTO-SHUT DOWN

The Merlin 1000SW+ has a build-in Auto-shut down feature and it will turn itself off after predefined time. Auto-shut down timeout is selectable. There are two blue dip-switches located on the inside facia of the Merlin 1000SW+ labelled “Time1” and “Time2”. They are factory set in the ‘off’ position. On installation, they can be switched to the ‘on’ position to select required timeout.

Time1 Off, Time2 Off – 2 hours
Time1 On, Time2 Off – 4 hours
Time1 Off, Time2 On – 8 hours
Time1 On, Time2 On – no timeout (auto-shut down disabled)

On Auto-shut down gas supply will be turned Off. There are two blue dip-switches located on the inside facia of the Merlin 1000SW+ labelled “Electric” and “Water”. They are factory set in the ‘off’ position. On installation, they can be switched to the ‘on’ position. This will instruct the system to also turn off Electric and/or Water services when performing Auto-shut down.

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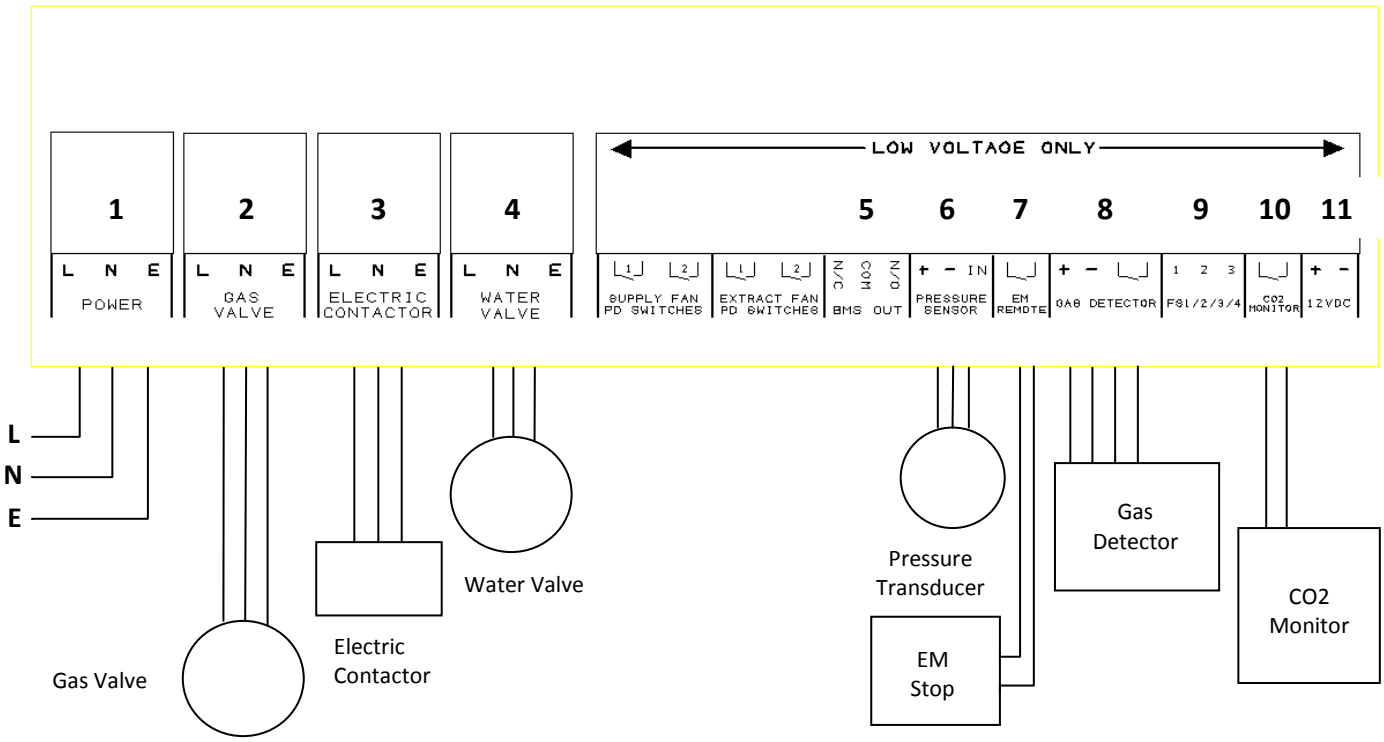
1000SW+ Wiring Diagram



1. Mains Input 230V Single Phase.
2. Gas Solenoid Valve Power Output, 230VAC, Max 3A.
3. Electric Contactor Power Output, 230VAC, Max 3A.
4. Gas Solenoid Valve Power Output, 230VAC, Max 3A.
5. BMS output contacts. Common, Normally Closed and Normally Open. Max.1A @ 230VAC.
6. Gas pressure transducer, power supply and returned signal (supplied).
7. Remote EM Stop buttons and Fire Alarm input wired in series (purchased separately). **VOLT FREE INPUT**
8. Methane, CO or LPG Detector, power supply and **volt free input** (purchased separately).
9. Fan Switch output (purchased separately). For wiring instruction see Fan Switch user manual.
10. CO_2 Monitor (purchased separately). **VOLT FREE INPUT**
11. Permanent 12VDC output.

Please note, Mains wires and low voltage wires should not be run in the same ductwork as per the **LOW VOLTAGE DIRECTIVE**